

RULE 4308 BOILERS, STEAM GENERATORS, AND PROCESS HEATERS – 0.075 MMBtu/hr to less than 2.0 MMBtu/hr (Adopted October 20, 2005, Amended December 17, 2009, Amended November 14, 2013)

1.0 Purpose

The purpose of this rule is to limit emissions of oxides of nitrogen (NO_x) and carbon monoxide (CO) from boilers, steam generators, process heaters and water heaters.

2.0 Applicability

This rule applies to any person who supplies, sells, offers for sale, installs, or solicits the installation of any boiler, steam generator, process heater or water heater with a rated heat input capacity greater than or equal to 75,000 British thermal units per hour and less than 2,000,000 British thermal units per hour.

3.0 Definitions

3.1 APCO: the Air Pollution Control Officer of the San Joaquin Valley Unified Air Pollution Control District, or any person authorized to act on behalf of the APCO.

3.2 Boiler, Steam Generator or Water Heater: any external combustion equipment fired with any liquid or gaseous fuel to produce hot water or steam.

3.3 British Thermal Unit (Btu): the amount of heat required to raise the temperature of one pound of water from 59° F to 60° F at one atmosphere.

3.4 Certified Retrofit Kit: any burner, ancillary controls or blowers that have been demonstrated to comply with the provisions of this rule in Section 6.1, on a retrofit basis, on a particular model of unit.

3.5 District: as defined in Rule 1020 (Definitions).

3.6 EPA: United States Environmental Protection Agency.

3.7 Higher Heating Value (hhv): the total heat liberated per mass of fuel burned (Btu per pound), when fuel and dry air at standard conditions undergo complete combustion and all resulting products are brought to their standard states at standard conditions.

3.8 Hot Water Pressure Washer: for purposes of this rule, high-pressure cleaning machine in which the hot water discharge line (spray nozzle) is hand supported and intended for commercial and industrial applications.

- 3.9 Humidifier: a device or system that uses an air stream heated by a direct contact combustion process in combination with a water spray to produce warm air of high humidity in order to maintain or increase the moisture content of the material being processed or conveyed by the air stream. For the purpose of this rule, such a device is not considered a boiler, steam generator or process heater.
- 3.10 Instantaneous Water Heater: a water heater with a rated heat input capacity per hour that heats water only when it flows through a heat exchanger.
- 3.11 Manufactured Home: as defined in 42 United States Code Section 5402 and California Health and Safety Code Section 18007.
- 3.12 NO_x Emissions: the sum of oxides of nitrogen (NO_x) in the flue gas, collectively expressed as nitrogen dioxide.
- 3.13 Process Heater: any combustion equipment fired on gaseous or liquid fuel, which transfers heat from combustion gases to water or process streams. Process heaters exclude kilns or ovens used for drying, baking, cooking, calcining, heat treating, or vitrifying.
- 3.14 PUC Quality Natural Gas: California Public Utility Commission Quality Natural Gas is any gaseous fuel, gas-containing fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet and no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet. PUC quality natural gas also means high methane gas of at least 80% methane by volume.
- 3.15 Rated Heat Input: the heat input capacity, usually expressed as million Btu per hour (MMBtu/hr), usually specified on the nameplate of the unit. If the unit has been physically modified such that its maximum heat input differs from what is specified on the nameplate, the modified maximum heat input shall be considered as the rated heat input and made enforceable by Permit to Operate or Registration Certificate.
- 3.16 Recreational Vehicle: any vehicle used for recreational purposes and designed to include a water heater and is required to be licensed to be driven or moved on the highways of California.
- 3.17 SCAQMD: South Coast Air Quality Management District.
- 3.18 Unit: any boiler, process heater, or water heater as defined in this rule.

4.0 Exemptions

The provisions of this rule shall not apply to:

- 4.1 Units installed in manufactured homes;
- 4.2 Units installed in recreational vehicles; and
- 4.3 Hot water pressure washers.

5.0 Requirements

- 5.1 Until December 31, 2014, a person shall not supply, sell, offer for sale, install or solicit the installation of any boiler, process heater or water heater unless it has been certified pursuant to Section 6.1 and complies with Table 1 NOx limits and CO limits specified in Section 5.3.
- 5.2 On and after January 1, 2015, a person shall not supply, sell, offer for sale, install or solicit the installation of any boiler, process heater or water heater unless it has been certified pursuant to Section 6.1 and complies with Table 2 NOx limits and CO limits specified in Section 5.3.
- 5.3 Units with a rated heat input capacity of 0.4 MMBtu/hr to less than 2.0 MMBtu/hr shall not exceed the CO limit of 400 ppm at 3% stack gas oxygen by volume on a dry basis.

Table 1 Emission Limits (Effective until December 31, 2014)		
Type and Size of Unit, in MMBtu/hr	NOx Limit (at 3% stack gas oxygen by volume on a dry basis)	
	PUC Gas lb/MMBtu of heat input (ppmv)	Non PUC Gas or Liquid lb/MMBtu of heat input (ppmv)
Units greater than or equal to 0.075 but less than or equal to 0.4, except as specified below	0.024 (20)	0.093 (77)
Units greater than 0.4 but less than 2.0, except as specified below	0.024 (20)	0.036 (30)
Instantaneous water heaters and pool heaters greater than or equal to 0.075 but less than or equal to 0.4	0.068 (55)	0.093 (77)
Instantaneous water heaters and pool heaters greater than 0.4 but less than 2.0	0.024 (20)	0.036 (30)

Table 2 Emission Limits (Effective on and after January 1, 2015)		
Type and Size of Unit, in MMBtu/hr	NO _x Limit (at 3% stack gas oxygen by volume on a dry basis)	
	PUC Gas	Non PUC Gas or Liquid
	lb/MMBtu of heat input (ppmv)	lb/MMBtu of heat input (ppmv)
Units greater than or equal to 0.075 but less than or equal to 0.4, except as specified below	0.024 (20)	0.093 (77)
Units greater than 0.4 but less than 2.0, except as specified below	0.024 (20)	0.036 (30)
Instantaneous water heaters greater than or equal to 0.075 but less than or equal to 0.4	0.024 (20)	0.093 (77)
Instantaneous water heaters greater than 0.4 but less than 2.0	0.024 (20)	0.036 (30)
Pool heaters greater than or equal to 0.075 but less than or equal to 0.4	0.068 (55)	0.093 (77)
Pool heaters greater than 0.4 but less than 2.0	0.024 (20)	0.036 (30)

6.0 Administrative Requirements

6.1 Methods of Emission Certification

Certified emissions levels shall be demonstrated by an emission certification approved under either of the following:

- 6.1.1 The District's certification program as described in Section 6.2 and 6.3 of this rule.
- 6.1.2 The SCAQMD Certification List for Rule 1146.2.
- 6.1.3 Other emission certification programs approved by the EPA and APCO.

6.2 District Certification Program Specifications – Unit Manufacturer

- 6.2.1 For each new unit or retrofit kit to be certified, the manufacturer shall obtain from an independent testing laboratory, a certification source test verifying compliance with the emission limits in Section 5.0. The results shall be submitted with the compliance report information in Section 6.3.

- 6.2.2 Source tests shall be conducted on a randomly selected unit no more than 90 days prior to the date of proposed certification of the model by the District.
- 6.2.3 Tests shall be conducted and reports shall be prepared according to District Rule 1081 (Source Sampling) and, for natural gas-fired units, the “Nitrogen Oxides Emissions Compliance Testing for Natural Gas-Fired Water Heaters and Small Boilers,” Protocol, SCAQMD, Source Testing and Engineering Branch, Applied Science and Technology.
- 6.2.4 District certification for a manufacturer shall be valid for three years from the date of certification.
- 6.2.5 The District shall publish and maintain a list of certified emissions for the tested unit.

6.3 Compliance Report

The compliance report shall be submitted to the District and shall contain the following information:

- 6.3.1 Name and address of manufacturer,
- 6.3.2 Brand name,
- 6.3.3 Model number, as it appears on the permanent nameplate, and
- 6.3.4 Description of the model unit or retrofit kit being certified, including burner type and rated heat input capacity.
- 6.3.5 A report on the certification test specified in Section 6.2.3.
- 6.3.6 A signed and dated statement attesting, under penalty of perjury, to the accuracy of all statements and information in the compliance report.

6.4 Identification of Compliant Units

The manufacturer subject to Section 6.2 shall display the model number and the certification status, as determined in Section 6.2 of this rule, of an applicable unit or retrofit kit on the permanent nameplate of the unit or kit. If packaging obscures the permanent nameplate, the model number and certification status shall also appear on the packaging.

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